



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO.                  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|----------------------------------|-------------|----------------------|---------------------|------------------|
| 10/761,890                       | 01/21/2004  | Paul Vande Voorde    | 42236P072D          | 4234             |
| 8791                             | 7590        | 09/21/2005           | EXAMINER            |                  |
| BLAKELY SOKOLOFF TAYLOR & ZAFMAN |             |                      | HUYNH, ANDY         |                  |
| 12400 WILSHIRE BOULEVARD         |             |                      | ART UNIT            |                  |
| SEVENTH FLOOR                    |             |                      | PAPER NUMBER        |                  |
| LOS ANGELES, CA 90025-1030       |             |                      | 2818                |                  |

DATE MAILED: 09/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 10/761,890             | VANDE VOORDE ET AL. |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Andy Huynh             | 2818                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-20 is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>08/11/04</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

In the Preliminary Amendment filed 01/21/2004, the Specification is amended, and Claims **21-33** are canceled. Accordingly, claims **1-20** are currently pending in the application, which is a DIV of 10/228,231 filed 08/26/2002 PAT 6,709,943.

#### ***Information Disclosure Statement***

This office acknowledges receipt of the following items from the applicant: Information Disclosure Statement (IDS) filed on 08/11/2004. The references cited on the PTOL 1449 form have been considered.

#### ***Claim Rejections - 35 U.S.C. § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims **1, 3, 4 and 5** are rejected under 35 U.S.C. 102(b) as being anticipated by Perloff et al. (USP 3,829,890 hereinafter referred to as "Perloff"), Applicant's submitted prior art (ASPA).

Regarding claim 1, Perloff discloses in Figs. 1-5 and the corresponding texts as set forth on column 1, line 15-column 8, line 24, a resistor comprising an p-type ion implanted resistor 21 formed in a crystalline silicon substrate 11 of the opposite conductivity n-type, the resistor being isolated from the rest of the substrate by a PN junction 22 and having an implantation dose providing a minimum resistance at a temperature of approximately room temperature (col. 1, lines 15-25).

Regarding claim 3, Perloff discloses the temperature variation of the resistance of the resistor across the temperature range of  $-50^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$  is less than 3% (col. 1, lines 15-25).

Regarding claim 4, Perloff discloses in Figs. 1-5 the resistor further comprising first and second heavily doped p+ regions 16 of the same conductivity type as the resistor body providing first and second contacts to the resistor.

Regarding claim 5, Perloff discloses in Figs. 1-5 the resistor further comprising an insulating layer 13 over the resistor with contact openings 26 therein to provide access to the first and second heavily doped regions, and a patterned metal layer 27 there over providing electrical contact to the heavily doped regions.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims **2, 6 and 7** are rejected under 35 U.S.C. 103(a) as being unpatentable over Perloff et al. (USP 3,829,890 hereinafter referred to as “Perloff”), Applicant’s submitted prior art (ASPA).

Regarding claim **2**, Perloff discloses the above claimed limitation except for the silicon substrate is a p-type substrate and the resistor body is formed by arsenic implantation. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to form the p-type substrate and the n-type resistor body by arsenic implantation simply reversing the polarities of the substrate and the resistor body, since it has been held that a mere reversal of the essential working parts of a device involves only routine skill in the art. In re Einstein, 8 USPQ 167.

Regarding claims **6 and 7**, Perloff discloses the above claimed limitation except for the resistor comprises part of a CMOS integrated circuit or a bipolar integrated circuit. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to form the resistor comprising part of a CMOS integrated circuit or a bipolar integrated circuit depending on the desired application that involves only routine skill in the art.

***Allowable Subject Matter***

Claims **8-20** are allowed.

The following is a statement of reason for the indication of allowable subject matter:

Claims **8-20** are considered allowable since the prior art made of record and considered pertinent to the application’s disclosure do not teach or suggest the claimed limitations. The prior art of

Art Unit: 2818

record fails to teach or render obvious an integrated circuit on a crystalline silicon substrate of a first conductivity type for operating over a temperature range of  $T_1$  to  $T_2$ , including an ion implanted resistor formed in the crystalline silicon substrate of the opposite conductivity type, the resistor having an implantation dose providing a minimum resistance at a temperature of approximately  $(T_1 + T_2)/2$ , and in combination with all other features as recited in independent Claim 8.

### *Conclusion*

A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the day of this letter. Failure to respond within the period for response will cause the application to become abandoned (see M.P.E.P 710.02(b)).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andy Huynh, (571) 272-1781. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571) 272-1787. The Fax number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the -status of this application or proceeding should be directed to the receptionist whose phone number is (703) 308-0956.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

Art Unit: 2818

applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ah

09/16/05



Andy Huynh

Patent Examiner